3.2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

3 2 1042

3548

MEMORANDUM

DATE: OCT 7 1991

SUBJECT: Review of Revised Sampling and Analysis Plan, Macroinvertebrate Study and Fish Sampling, Olin Corporation/McIntosh Plant Site McIntosh, Alabama

FROM: Joan J. Dupont, Environmental Biologist J.J. Dupont
Ground-Water Technology Support Unit

TO: Cheryl W. Smith, Remedial Project Manager
South Superfund Remedial Branch

THROUGH: Rutherford B. Hayes, Chief R.B. Hayes
Ground-Water Technology Support Unit

The Revised Sampling and Analysis Plan, Macroinvertebrate Study and Fish Sampling, for the Olin Corporation/McIntosh Plant Site has been reviewed, as requested in your memorandum of September 10, 1991 to Bernie Hayes. The following comments pertain to the ecological concerns at the site.

Sec. 2.1, p. 3 - The basin is inundated by the Tombigbee River during seasonal periods of high water levels, likely affecting migration of site-related contaminants. A map showing these high water levels (e.g., floodplain map) should be provided.

Sec. 4.1, p. 6 - Observations made during the Phase I field sampling indicate that emergent herbaceous vegetation was found in only one portion of the lake. This location should be specified. Since a more extensive littoral zone was apparently expected, possible causes of this lack of vegetation (e.g., possible presence of site-related contaminants in nearshore sediments or surface water, or frequent flooding of the area) should be investigated, if not already addressed as part of the vegetative stress survey.

Sec. 4.1, p.6 - Has a vegetation survey been conducted within the basin to determine the presence or absence of floating or submerged vegetation? If not, observations should be made in conjunction with the macroinvertebrate survey.

Sec. 4.1, p. 6 and Sec. 4.2, p. 7 - Since the presence of aquatic organisms can be affected by physical factors such as dissolved

oxygen, the following water quality parameters should be measured during the field sampling: pH, dissolved oxygen, temperature, conductivity, water depth for these measurements (near-surface and near-bottom, at a minimum).

Sec. 4.1, p. 7 - Three additional macroinvertebrate samples should be collected: one in the ditch that by-passes the basin and leads from the wastewater ditch to the discharge ditch, one at the confluence of this ditch and the discharge ditch, and one farther downstream in the discharge ditch.

Sec. 5.1.2, p. 9 - After the macroinvertebrates are stained and washed, they should again be stored in a preservative solution (such as isopropyl alcohol) if they are not processed immediately.

Sec. 5.1.2, p. 10 - Specify the major taxonomic keys to be used in macroinvertebrate identification. Also, indicate any QA/QC procedures used in conjunction with the macroinvertebrate analysis (e.g., verification of a percentage of the taxonomic identifications by a second taxonomist, maintenance of a specimen voucher collection).

Sec. 5.2, p. 10 - Analysis of fish filets is important with respect to human health concerns. For ecological concerns, however, whole-body concentrations in fish samples provide more valuable information. If possible, whole-body analysis should be substituted for the filet plus remains analyses. Otherwise, testing information (from available literature) should be presented to support the filet plus remains method as a reasonable estimate of whole-body concentrations. Additionally, the original sample size of five fish per species should be increased to ten fish, for either whole-body analysis or filet plus remains analyses.

Sec. 5.2, p. 10 and Sec. 5.2.6, p. 13 - The additional fish collected but not used for tissue analysis should also be weighed and measured (total length) to give a better picture of fish community structure.

Sec. 5.2.6, p. 13 - Specify whether the filets will have the skin on or off. Also, indicate the type of surface that the fish will be placed upon during fileting.

Sec. 5.5, p. 15 - Specify that the surface used for fileting fish should also be decontaminated between samples.

Sec. 6.3, p. 19 - State whether the fish samples will be analyzed

for total mercury or methyl mercury.

General comments:

1. Additional sampling should be conducted in the following areas of OU-2 and adjacent areas:

a) Sediment, surface water, and biological sampling in the two ponds north of the basin, since flow from the basin toward the ponds might be expected to occur during the seasonal inundation by the river.

b) Soil samples on the land between the basin and the Tombigbee River, since this might be a possible contaminant migration route during ebbing of floodwaters. Samples should be analyzed only for site-related indicator chemicals.

c) Surface water and sediment samples at three locations on the western side of the Tombigbee River: upstream of Olin's property line, along the southeastern property border (near land between the basin and the river), and just downstream from the discharge ditch.

2. Has any biological sampling been conducted in the Tombigbee River or of the plant effluent in conjunction with the Olin plant's NPDES permit?

3. Has the wetland area between the plant and the basin been investigated? If not, environmental sampling should be conducted at least in the southwestern portion of the wetland, near the plant's northeastern border, to check for possible contamination related to surface water runoff.

4. During the seasonal periods of high water levels, what is the flow direction of the shallow groundwater? Could it have reached (and discharged into) the wetland areas west or south of the plant in the past? If so, these areas should be sampled.

If there are any questions regarding this document, please feel free to contact me at x3866.